

Sub B1  
1 1. A package article for removably accepting a fiber  
2 optic cable, said package article operatively connected to a  
3 host card, comprising:

4 a laminate for supporting optoelectronic  
5 components;

6 an amplifier die operatively connected to and  
7 supported by said laminate for amplifying electrical  
8 signals;

9 a flexible circuit electrically connected to and  
10 supported by said laminate for receiving said amplified  
11 electrical signals from said amplifier die; and

12 an optoelectronic die electrically connected to  
13 said flexible circuit for receiving said amplified  
14 electrical signals generated by said amplifier die and  
15 for generating optical signals responsive thereto.

1           2. The package article for removably accepting a fiber  
2 optic cable operatively connected to a host card in  
3 accordance with claim 1, said package article further  
4 comprising:

5           a heatsink carrier operatively connected to said  
6 flexible circuit, and attached to said optoelectronic  
7 die for removing heat therefrom.

1           3. The package article for removably accepting a fiber  
2 optic cable operatively connected to a host card in  
3 accordance with claim 1, said package article further  
4 comprising:

5           an optical subassembly in optical communication  
6 with said optoelectronic die for receiving and  
7 processing said optical signals therefrom, said optical  
8 subassembly comprising an optical coupler and a  
9 removable optical connector having an optical cable.

1           4. An optoelectronic subassembly for accepting optical  
2 signals from a fiber optic cable, said optoelectronic  
3 subassembly being operatively connected to a host card, said  
4 optoelectronic subassembly comprising:

5           an optoelectronic die for receiving electrical  
6 signals and for generating optical signals responsive  
7 thereto;

8           a flexible circuit electrically connected to said  
9 optoelectronic die;

10          an optical coupler optically connected to said  
11 optoelectronic die for receiving optical signals  
12 therefrom; and

13          a heatsink carrier operatively connected to said  
14 flexible circuit, and attached to said optoelectronic  
15 die for removing heat therefrom.

1           5. The optoelectronic subassembly for accepting  
2       optical signals from a fiber optic cable in accordance with  
3       claim 4, said optoelectronic subassembly further comprising:

4           an optical connector removably connected to and in  
5       optical communication with said optical coupler; and

6           a retainer operatively connected to said optical  
7       coupler and removably connected to said optical  
8       connector for aligning said optical coupler and optical  
9       connector.

1           6. The optoelectronic subassembly for accepting  
2       optical signals from a fiber optic cable in accordance with  
3       claim 5, wherein said optical connector further comprises an  
4       optical cable.

1           7. A package article for removably accepting a fiber  
2 optic cable, said package article operatively connected to a  
3 host card, said package article comprising:

4           a flexible circuit for receiving electrical  
5 signals;

6           an optoelectronic die operatively connected to  
7 said flexible circuit for receiving said electrical  
8 signal and for generating optical signals responsive  
9 thereto; and

10          a heatsink carrier operatively connected to said  
11 flexible circuit, and attached to said optoelectronic  
12 die for removing heat therefrom.

1 8. The package article in accordance with claim 7,  
2 further comprising:

3 a laminate for supporting optoelectronic  
4 components;

5 an amplifier die operatively connected to and  
6 supported by said laminate for amplifying electrical  
7 signals;

8 an optical subassembly in optical communication  
9 with said optoelectronic die for receiving and  
10 processing said optical signals therefrom, said optical  
11 subassembly comprising an optical coupler and a  
12 removable optical connector having an optical cable;  
13 and

14 a retainer operatively connected to said optical  
15 coupler and removably connected to said optical  
16 connector for aligning said optical coupler and optical  
17 connector.

1           9. A package article for removably accepting a  
2 horizontally oriented fiber optic cable, operatively  
3 connected to a host card, comprising: a flexible circuit  
4 disposed between at least one translating die operatively  
5 connected to a laminate, and an optoelectronic die; at least  
6 one heatsink carrier; a fiber optic cable connected to said  
7 at least one translating die such that said fiber optic  
8 cable exits from said laminate in a direction substantially  
9 parallel to a horizontal plane defining an orientation of  
10 said laminate; an overmold frame that is supported by said  
11 laminate, said overmold frame having a cavity for receiving  
12 said flexible circuit, said optoelectronic die and said at  
13 least one heatsink carrier; said at least one heatsink  
14 carrier being operatively connected to said optoelectronic  
15 die; said cavity of said overmold frame enclosing and  
16 securing said at least one heatsink carrier, said  
17 optoelectronic die and said flexible circuit.

1           10. The package article in accordance with claim 9,  
2 further comprising an adhesive for attaching said flexible  
3 circuit to said at least one heat sink carrier and said  
4 laminate to said flexible circuit and said optoelectronic  
5 die to said at least one heat sink carrier.

Sub B4  
1 11. The package article in accordance with claim 9,  
2 further comprising at least one faraday barrier shield, said  
3 overmold frame housing said at least one faraday barrier  
4 shield providing RF isolation of said at least one  
5 optoelectronic die.

1 12. The package article in accordance with claim 9,  
2 further comprising a fiber optic coupling disposed between  
3 said optoelectronic die and said at least one fiber optic  
4 cable.

1 13. The package article in accordance with claim 12,  
2 further comprising a retainer, and wherein said fiber optic  
3 coupling disposed between said optoelectronic die and said  
4 at least one fiber optic cable is snap connected to said  
5 retainer, said retainer being attached to said heatsink  
6 carrier.

1 14. The package article in accordance with claim 12,  
2 wherein said fiber optic coupling comprises an overmolding.



1 15. The package article in accordance with claim 12,  
2 wherein said fiber optic coupling comprises an optical  
3 coupler connected to said optoelectronic die at one end,  
4 said optical coupler being attached to an optical connector  
5 at an opposite end, said optical connector being connected  
6 to said at least one fiber optic cable.

1 16. A package article for coupling a horizontally  
2 oriented set of fiber optic cables to vertically oriented  
3 translating dies, comprising: at least one fiber optic  
4 cable, said fiber optic cable being oriented substantially  
5 parallel to a plane defining a substantially horizontally  
6 oriented laminate, a flexible circuit operatively disposed  
7 between said laminate and said at least one fiber optic  
8 cable, such that said at least one fiber optic cable exits  
9 from said laminate in a direction substantially parallel to  
10 a horizontal plane defining an orientation of said laminate,  
11 an overmold frame that is supported by said laminate, a  
12 heatsink carrier with optoelectronic die, said overmold  
13 frame having a cavity for receiving said flexible circuit,  
14 said optoelectronic die and said heatsink carrier.

1           17. A package article for communicating with a host  
2 card, said package article having a structure in accordance  
3 with claim 16, and being disposed proximate said host card  
4 for transmitting electronic signals therebetween.

1           18. The package article in accordance with claim 16,  
2 further comprising at least one RF barrier shield, said  
3 overmold frame housing said at least one RF barrier shield  
4 for RF isolation of said at least one optoelectronic die.

1           19. The package article in accordance with claim 16,  
2 further comprising a fiber optic coupling disposed between  
3 said at least one optoelectronic die and said at least one  
4 fiber optic cable.

1           20. The package article in accordance with claim 19,  
2 further comprising a retainer, and wherein said fiber optic  
3 coupling disposed between said at least one optoelectronic  
4 die and said at least one fiber optic cable is removably  
5 secured to said retainer, said retainer being attached to  
6 said heatsink carrier.

1           21. The package article in accordance with claim 19,  
2 wherein said fiber optic coupling comprises an overmolding.

1           22. The package article in accordance with claim 19,  
2 wherein said fiber optic coupling comprises an optical  
3 coupler connected to said optoelectronic die at one end,  
4 said optical coupler being attached to an optical connector  
5 at an opposite end, said optical connector being connected  
6 to said at least one fiber optic cable.

1           23. A transmitting optoelectric subassembly for  
2 accepting a parallel fiber optic connector that is secured  
3 to one end of a parallel fiber optic cable, comprising:

4           an optoelectronic subassembly comprising a  
5 transmitting optoelectronic device secured to a  
6 carrier, an electrical signal transfer device, and  
7 an optical coupler signal transfer device secured  
8 to a retainer and to said carrier; and

9           an electronic subassembly comprising an overmold  
10 frame secured to a laminate and to said retainer.

1           24. The package in accordance with claim 23, wherein  
2       said electrical signal transfer device electronically  
3       couples an electronic signal from said laminate to said  
4       transmitting optoelectronic device, said transmitting  
5       optoelectronic device converts said electronic signal to an  
6       optical signal, said optical signal transfer device  
7       optically couples said optical signal to said parallel fiber  
8       optic connector, and said retainer removably retains said  
9       parallel fiber optic connector.

1           25. An electronic package subassembly for electrically  
2 coupling to an external contact pad array disposed on a host  
3 electronic base, said electronic package subassembly  
4 disposed to mechanically and electrically accept an external  
5 electronic component, said electronic package subassembly  
6 comprising:

7           an electronic device secured to a laminate  
8 having a first contact pad array for  
9 electrically coupling to said external contact pad  
10 array, a second contact pad array for electrically  
11 coupling to said external electronic component,  
12 and laminate wiring for electrically coupling said  
13 first contact pad array to said second contact pad  
14 array and to said electronic device; and

15           an overmold frame having an encasement portion  
16 that substantially encapsulates said electronic  
17 device and alignment means for accepting said  
18 external electronic component.

1           26. An electronic package subassembly electrically  
2 coupled to a host electronic base by an electronic signal,  
3 said electronic package subassembly adapted to mechanically  
4 and electrically accept an external electronic component,  
5 said electronic package subassembly comprising:

6           a) an electronic device;

7           b) a laminate comprising laminate wiring;

8           c) a first contact pad array on a first laminate  
9 surface for electrically coupling said electronic  
10 signal to said laminate wiring;

11           d) a second contact pad array disposed on a second  
12 laminate surface, said laminate wiring electrically  
13 routing and electrically coupling said first contact  
14 pad array to said electronic device and to said second  
15 contact pad array; and

16           e) an overmold frame comprising an encasement  
17 portion and alignment means for accepting said external  
18 electronic component;

19 wherein said electronic device is secured to said  
20 second laminate surface and encased substantially within  
21 said encasement portion.

1 27. A method for coupling at least one fiber optic  
2 cable to at least one translating die, comprising:

3 applying an electrical signal from an amplifier  
4 die to a flexible circuit disposed on a laminate to  
5 which a host card is electrically connected;

6 converting said electrical signal to an optical  
7 signal; and

8 applying said optical signal to an optical coupler  
9 for transmitting said optical signal to an optical  
10 connector attached to said at least one fiber optic  
11 cable.

1           28. The method for coupling at least one fiber optic  
2 cable to at least one translating die in accordance with  
3 claim 27, the steps further comprising:

4           removing heat from an optoelectronic die used in  
5 said electrical signal converting step.

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1           30. The method for coupling at least one fiber optic  
2 cable to at least one translating die in accordance with  
3 claim 27, the steps further comprising:

4                   providing a retainer operatively connected to said  
5 optical coupler and removably connected to said optical  
6 connector for aligning said optical coupler with said  
7 at least one fiber optic cable of said optical  
8 connector.

*add A1*